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## Author Affiliation:

<sup>1</sup>Final Year Medical Student, School of Medicine, International Medical University Clinical Campus, Seremban, Malaysia

<sup>2</sup>Senior Lecturer, Department of Internal Medicine, School of Medicine, International Medical University Clinical Campus, Kluang, Malaysia

## Corresponding author

Senior Lecturer, Department of Internal Medicine, School of Medicine, International Medical University Clinical Campus, Kluang, Malaysia

Email: anis\_ahmedkhan@imu.edu.my

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# Attitudes towards patient-centered care among final-year undergraduates from four health care disciplines in a Malaysian private university

Davasooria Selvamani<sup>1</sup>, Anis Ahmed Khan<sup>2</sup>✉, Khadheeja Abdulla<sup>1</sup>, Hui Min Lee<sup>1</sup>, Ee Heng Loh<sup>1</sup>, Ching Ying Ng<sup>1</sup>

## ABSTRACT

**Background:** Patient-centeredness models upon a multi-aspect treatment with the aim of providing patients with the best outcome of treatment. However, there are limited numbers of studies which compare patient-centeredness between different health care disciplines. This study aims to identify and compare the level of patient-centeredness among students in a local private healthcare university. **Method:** The study used a cross-sectional design using the Patient-Practitioner Orientation Scale (PPOS). The study population comprised 125 final year undergraduates across the disciplines of Medicine, Pharmacy, Dentistry, and Dietetics and Nutrition. **Results:** Overall, no significant difference was noted in the 'sharing' and 'caring' scores between students across the four health care disciplines. The only significant difference noted was of the 'caring' scores between medical and pharmacy students. **Conclusion:** Final year undergraduates in International Medical University (IMU) are moderately patient-centered, regardless of whether they are in any of the four disciplines. Further studies should be carried out to compare these findings with undergraduates at various points of their education.

**Keywords:** Patient-centeredness, Patient-centered care, Final-year undergraduates, Health care

## 1. INTRODUCTION

Patient-centered care (PCC) can be defined as “a multidimensional model in which healthcare providers are to provide care surrounding the values, beliefs, needs and desires of patients including involve patients into health care discussions and decisions” (Rosewilliam et al., 2019). To further explain this, health care workers should include treatments for patients not solely based on clinical treatment but should be providing treatment in different aspects such as physically, emotionally, mentally, spiritually, socially, and financially. However, the correct and recognized definition of PCC is yet to be



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found in known literatures. Therefore, the definition of PCC may vary according to setting or perspective being represented. In order to provide the best treatment outcome for patients, health care providers with roles such as doctors, nurses and medical assistants should place their patients' wellbeing as their main focus. Patients place hope in health care providers to approach them with PCC to ease their worries and concerns regarding not only their diseases but also other aspects such as emotional needs, lifestyle and financial issues.

The PCC approach has shown improvements from aspects including clinical efficiency, medication adherence, health care provider-patient relationship and patient's satisfaction on care. It also reduces the organisation's expenses (Ghane & Esmaeili, 2020). Although the benefit of PCC is well established, there are studies which show that patients have issues with PCC being offered to them. In a research conducted by BMC Health Services Research is to analyse the satisfaction with the care of physical and social wellbeing of patients with multiple comorbidities. Based on the results, the mean scores of the study from parameters such as emotional support, and friends and family, scored relatively low with 3.45 and 3.57 respectively. These results indicate that over a quarter of the participants in the study were not satisfied that friends and family were not able to participate in the care for the patient. In addition, over half of the participants of the study were not satisfied with the level of emotional support provided by their care providers (Kuipers et al., 2019).

In order to make improvements on the situation, the common approach would be to provide training to health care professionals in terms of attitude and skills that place priority for their patients. These lessons are essentials in medical schools as the behavior and skills are needed to be cultivated in early stages, primarily when they are as students. Evidence of this approach was shown in a study from International Journal of Therapy and Rehabilitation. PCC teachings were introduced into dental and physiotherapy curricula and the outcome showed that the level of care provided was patient-centered (Roskell et al., 2012). Therefore, the introduction of patient-centered care into medical school curricula would benefit future health care providers in delivering better care and treatment whilst improving the overall health care system (Hurley et al., 2018). With the concept of PCC acting as an important bearing in the medical field, the exploration of the concept of PCC by medical students is essential to guide them into providing correct methods of PCC in clinical settings. Yet in Malaysia, limited studies were conducted to explore student's attitudes or views regarding PCC.

Hence, the objective of our study aims to identify the beliefs and determine and to compare the levels of perception to patient-centered attitude among the participants. The participants of our study consist of final year undergraduates from four health care disciplines in IMU, namely Medicine, Pharmacy, Dietetics with Nutrition, and Dentistry.

## 2. METHODOLOGY

### Study design and population

A cross-sectional study was conducted in International Medical University, Malaysia. The university offers a broad range of health care-related disciplines. We selected the disciplines of Medicine, Dentistry, Pharmacy, and Dietetics with Nutrition (DN). Medicine and Dentistry are 5-year courses, while Pharmacy and DN each take 4 years to complete. Only final year undergraduate students at the start of the year 2020 were invited to participate, because they had the most clinical exposure compared to students from the younger years. There were 5 cohorts of students, with 2 coming from Medicine.

### Study duration

June 2020 – November 2020.

### Study instrument

The Patient Practitioner Orientation Scale (PPOS) was used for data collection, with kind permission obtained from its developer, Dr Krupat. It is a reliable instrument which differentiates between a doctor-centered versus patient-centered attitude towards medical practice. The scale consists of 18 items in a 6-point Likert scale, with the responses ranging from 1 (strongly agree) to 6 (strongly disagree). The scale has two subscales which measure two domains of the relationship between health care provider and patient, i.e. sharing and caring. Sharing signifies one's belief that a patient and their doctor should have an equal amount of control, flow of information and power. For example, statement 4 states "It is often best for patients if they do not have a full explanation of their medical condition." Caring portrays to one's belief that a patient should be viewed upon holistically and with good emotional rapport instead of as a condition or disease. For example, statement 16 states "It is not that important to know a patient's culture and background in order to treat the person's illness." Both subscales have 9 items each. The PPOS provides a mean score range from 1–6, whereby 1 refers to inclination towards a health care provider-centered relationship and 6 brings about the impression of

a patient-centered relationship. In our research, the word “doctor” was substituted by “health care provider” to reflect the diversity of disciplines of the study population. The internal consistency was reported to be satisfactory in the original study which utilised the PPOS ( $\alpha=0.73$ ) (Krupat et al., 2000).

### Sampling and data collection

The sample size had a total of 371 students. This comprises of 154 students from Medicine, 46 from Dentistry, 129 from Pharmacy and 42 from Dietetics with Nutrition. Total population sampling, which is a type of purposive sampling technique, was used as the sampling technique to study the entire population of final-year undergraduate students from the four health care disciplines. Data collection was conducted during the Covid-19 pandemic, so face-to-face interaction was nonexistent. Therefore, online questionnaires were disseminated via student institution emails. The questionnaire platform used was Microsoft Forms.

### Statistical analysis

Microsoft Excel was used for dataset establishment. PSPP version 1.4.1 was used for data analysis. Patient-centered attitudes of respondents in multiple disciplines were measured by a Likert scale in terms of sharing and caring on the PPOS using independent one-way analysis of variance (ANOVA). To be considered statistically significant,  $p$ -values must be less than 0.05. Bonferroni test was used for multiple comparisons between the different health care disciplines, to reduce instances of false positives.

## 3. RESULTS

Table 1 presents the response rates of the sampled population. The overall number of students in the population is 371. The total response rate was 125/371 (33.7%), with DN students providing the highest response rate (31/42, 73.8%) and dentistry students having the lowest response rate (11/46, 23.9%). The response rate of medical students and pharmacy students was also considered low. 51 out of 154 medical students (33.1%) and 32 out of 129 pharmacy students (24.8%) submitted their survey responses. As listed, a total of 125 responses were received across the 4 disciplines. All responses were valid. The responses constituted 51 (40.8%) students who were from Medicine, 32 (25.6%) were pharmacy students, 31 (24.8%) were DN students and 11 (8.8%) were from Dentistry. 74.4% of respondents were female.

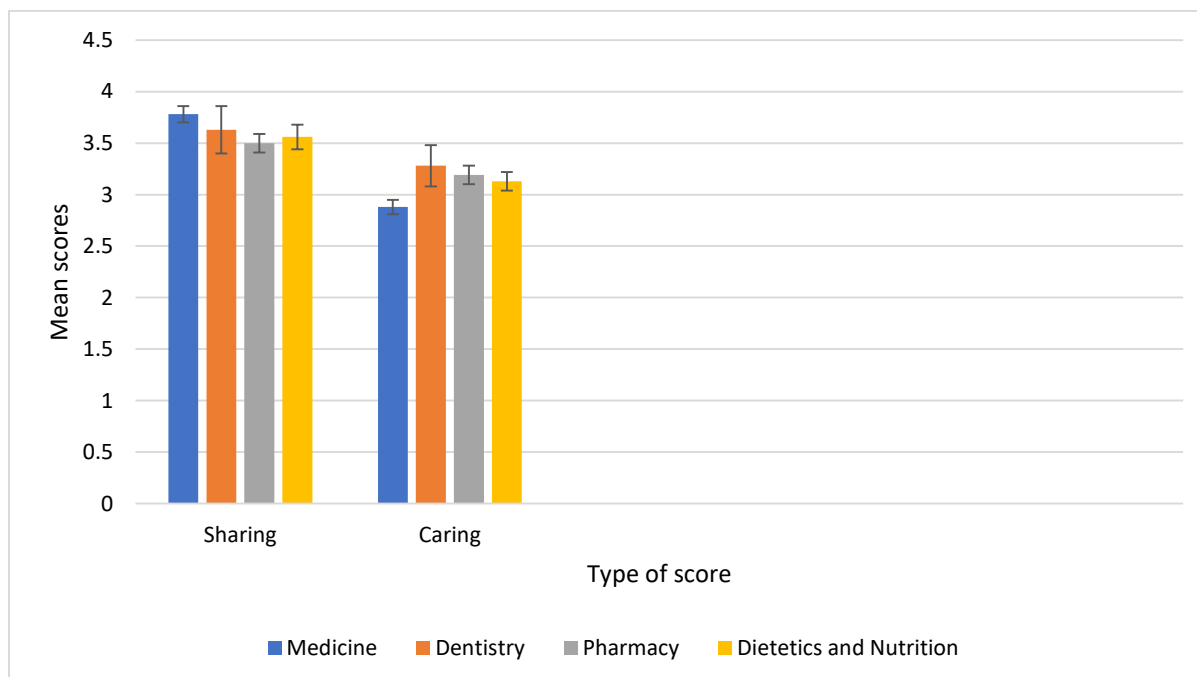
**Table 1** Characteristics of the study population (n=125)

Discipline	Male, n (%)	Female, n (%)	Total sample, n (%)
Medicine	20 (16.0)	31 (24.8)	51 (40.8)
Dentistry	1 (0.8)	10 (8.0)	11 (8.8)
Pharmacy	7 (5.6)	25 (20.0)	32 (25.6)
Dietetics and Nutrition	4 (3.2)	27 (21.6)	31 (24.8)
Total	32 (25.6)	93 (74.4)	125 (100.0)

Wide-ranging responses to individual items of the PPOS were noted. These are shown as follows: ‘It is often best for patients if they do not have a full explanation of their medical condition’ (78.4% moderately or strongly disagreed), ‘If health care providers are truly good at diagnosis and treatment, the way they relate to patients is not that important’ (73.6% moderately or strongly disagree) and ‘It is not important to know a patient’s culture and background in order to treat the person’s illness’ (81.6% moderately or strongly disagreed), majority showed awareness in patient-centered care and understood the significance of approaching patients in a holistic way. However, responses of some items showed opposite results. For instance, only 10.4% disagreed with the statement ‘A treatment cannot succeed if it is in conflict patient’s lifestyle or value’, indicating only minority showed patient-centeredness regarding patients’ lifestyle and value relating treatment. In addition, respondents who disagreed with the statement ‘Patient should be treated as if they were partners of the health care providers, equal in power and statuses’, only consist of 17.6%.

Figure 1 shows the collected data were descriptively analysed. The overall mean score for PPOS was 3.35, on a 1-6 scale regarding the scores of sharing and caring components. Interestingly, the mean sharing score were slightly higher than the mean caring score. The mean value for the PPOS sharing component was 3.64 (SD 0.59), with averages of individual disciplines ranging from 3.50 (Pharmacy, 95% CI 3.32-3.68) to 3.78 (Medicine, 95% CI 3.62-3.94). Between disciplines, no significant differences were noted in the mean sharing score ( $p$ -value = 0.153 from one-way ANOVA). On the contrary, the mean score for the caring items was 3.06 (SD 0.53). Averages of individual disciplines ranged from 2.88 to 3.28, with Medicine having the lowest mean score (95% CI

2.74-3.01). Dentistry had the highest mean score (95% CI 2.83-3.74). Table 2 shows that a significant difference was observed in the mean caring score between disciplines ( $p$ -value = 0.013 from one-way ANOVA).



**Figure 1** Distribution of sharing and caring scores of PPOS among different disciplines

**Table 2** One-way ANOVA for mean sharing and mean caring scores

		Sum of squares	df	Mean square	F	Sig.
Mean sharing score	Between disciplines	1.85	3	0.62	1.79	0.153
	Within disciplines	41.68	121	0.34		
	Total	43.53	124			
Mean caring score	Between disciplines	2.96	3	0.99	3.72	0.013
	Within disciplines	32.10	121	0.27		
	Total	35.05	124			

Table 3 and Table 4 show the Bonferroni test was used for multiple comparisons in statistical analysis between each discipline, to reduce instances of false positive. The variation in the mean sharing scores by disciplines from largest to smallest was 0.28 (Medicine compared to Pharmacy), 0.23 (Medicine compared to DN), 0.16 (Medicine compared to Dentistry), 0.12 (Dentistry compared to Pharmacy), 0.07 (Dentistry compared to DN) and 0.05 (DN compared to pharmacy). Despite this, each mean difference between individual disciplines were insignificant ( $p > 0.05$ ). For the mean caring components, the differences in scores between disciplines ranged from the highest at 0.41 (Dentistry compared to Medicine) to the lowest at 0.05 (Pharmacy compared to DN). The other mean differences within the range were 0.31 (Pharmacy compared to Medicine), 0.26 (DN compared to Medicine), 0.15 (Dentistry compared to DN) and 0.10 (Dentistry compared to Pharmacy). Other than the mean caring score difference between Pharmacy and Medicine ( $p \leq 0.05$ ), all mean caring score differences between each programme were insignificant.

**Table 3** Bonferroni's method to compare sharing scores between multiple disciplines

Multiple comparisons of mean sharing scores between disciplines					
Discipline (I)	Discipline (J)	Mean Difference (I-J)	Sig.	95% Confidence interval	
				Lower bound	Upper bound
Pharmacy	Medicine	0.28	0.224	-0.63	0.08
	Dietetics and Nutrition	0.05	1.000	-0.45	0.34
	Dentistry	0.12	1.000	-0.67	0.43
Medicine	Pharmacy	0.28	0.224	-0.08	0.63
	Dietetics and Nutrition	0.23	0.556	-0.13	0.59
	Dentistry	0.16	1.000	-0.37	0.68
Dietetics and Nutrition	Pharmacy	0.05	1.000	-0.34	0.45
	Medicine	0.23	0.556	-0.59	0.13
	Dentistry	0.07	1.000	-0.62	0.48
Dentistry	Pharmacy	0.12	1.000	-0.43	0.67
	Medicine	0.16	1.000	-0.68	0.37
	Dietetics and Nutrition	0.07	1.000	-0.48	0.62

**Table 4** Bonferroni's method to compare caring scores between multiple disciplines

Multiple comparisons of mean caring scores between disciplines					
Discipline (I)	Discipline (J)	Mean Difference (I-J)	Sig.	95% Confidence interval	
				Lower bound	Upper bound
Pharmacy	Medicine	0.31	0.050	0.00	0.62
	Dietetics and Nutrition	0.05	1.000	-0.29	0.40
	Dentistry	0.10	1.000	-0.58	0.39
Medicine	Pharmacy	0.31	0.050	-0.62	0.00
	Dietetics and Nutrition	0.26	0.183	-0.57	0.06
	Dentistry	0.41	0.114	-0.87	0.05
Dietetics and Nutrition	Pharmacy	0.05	1.000	-0.40	0.29
	Medicine	0.26	0.183	-0.06	0.57
	Dentistry	0.15	1.000	-0.64	0.33
Dentistry	Pharmacy	0.10	1.000	-0.39	0.58
	Medicine	0.41	0.114	-0.05	0.87
	Dietetics and Nutrition	0.15	1.000	-0.33	0.64

#### 4. DISCUSSION

The main findings of the research showed that the overall score of the PPOS was leaning towards patient-centered orientation by a small margin. Patient-centered care is without doubt the approach to caring for a patient that needs to be used more widely. It not only improves patient outcomes as they are more comfortable with sharing more with the health care professional but they also they get the opportunity to be more vocal about their needs and expectations when making a decision about their management. The two major components tested in the questionnaire, the sharing and the caring component had minor difference but both had a score of 3 and above. Although the score leans towards a patient-centered approach, there are still a vast number of responses that lean to a health care provider-centered approach. This might be due to numerous reasons including the student's understanding of a holistic care, the curriculum and numerous other factors. When comparing different health care disciplines, it is vital to consider the hours of exposure each discipline gets to be directly involved in patient care as this would most certainly affect the development of student's attitudes towards patients (Miettola et al., 2005).

A significant difference was appreciated between Medicine and Pharmacy for the caring component. This, despite medical students being given more hours with patients showed a more health care provider-centered approach when compared to the

pharmacy students. In our study, it is vividly evident that the highest sharing score was obtained by the medical students, which goes along with the belief that more exposure and more time with patients yield more patient-centered care. This has been observed in previous studies done on undergraduate medical students as well (Rosewilliam et al., 2019).

### Limitations

The research was carried out online through Microsoft Forms during the COVID-19 pandemic and close to the examination season of numerous students which yielded in fewer response rates than had been anticipated. In addition to that, numerous factors that might influence the student's opinions such as cultural backgrounds, period of clinical exposure were not taken into account.

Further research is needed in this topic with a larger sample size to ensure results with more information on the subject. It is also important to explore the specific training components within the curriculum of the multiple disciplines involved to check for any factors that might contribute to patient-centeredness or health care provider-centeredness in a student. With this information, a curriculum that is capable to address such factors can be developed to ensure that the students have a considerable amount of holistic approach when dealing with patients.

## 5. CONCLUSION

In this era of multidisciplinary care, it is vital to communicate every aspect of taking care of a patient clearly in words that are well understood by the patient and rest of the team and at a pace that allows the patient to be an active participant of the team. It is also equally important to involve the patient and the rest of the team of health care professionals in any decision taken regarding the treatment of a patient. In this manner, across the globe, the approach of patient centered care is being adopted. This study was aimed at looking at the attitudes of final year students in 4 different health care related disciplines. The overall results are promising as it points to a patient-centered approach however further studies are needed to look at the possible factors that may have contributed to the significantly low margin between patient-centered care and health care provider-centered care.

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### Author contributions

DS contributed to conception and design of the study, acquisition of data, drafting of manuscript, and important intellectual revisions to the manuscript. AAK led in conception and design of the study. HML contributed to acquisition of data and drafting of manuscript. KA, EHL and CYN contributed to interpretation of data and drafting of manuscript.

### Ethical declaration

The IMU Joint-Committee on Research and Ethics, International Medical University, approved this study (Number: CSc/Sem 6(13)2020, dated: 29th June 2020).

### Conflicts of interest

The authors declare that they have no conflict of interest.

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### Data and materials availability

All data associated with this study are present in the paper.

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